Metropolitan Life
AND AFFILIATED COMPANIES

B6045-1A

SB
STATISTICAL BULLETIN

Vol 67 No 3 Jul-Sep 1986

2 **Costs for Cesarean Section: Regional Variations.** Analysis of the rising rates and higher costs for this delivery plus a revealing commentary by Paul Placek, Ph.D. National Center for Health Statistics

11 **Recent Trends in Marriage.** Is the institution stable? Insights into the ups and downs of recent demographic data

18 **Accident Mortality Among Men of Working Ages.** Significant implications for accident prevention in the working environment

25 **Record Longevity Maintained.** Life expectancy in the United States hits a record plateau

Contents

Statistical Bulletin Vol. 67, No. 3 Jul-Sep 1986

1 From the Editor's Desk

2 Costs for Cesarean Section: Regional Variations

9 Commentary: Cesarean Rate Still Rising
Paul J. Placek, Ph.D., Survey Statistician, Division of Vital Statistics, National Center for Health Statistics

11 Recent Trends in Marriage

16 Capsule Briefs

18 Accident Mortality Among Men of Working Ages

25 Record Longevity Maintained

30 Statistical Information, Please

32 Health and Safety Education Materials

Back Cover: Historical Perspectives

John J. Creedon
President and
Chief Executive Officer

Paul S. Entmacher, M.D.
Vice President and
Chief Medical Director

William R. Cunnick, Jr., M.D.
Vice President and
Deputy Chief Medical Director

Clarence E. Pearson, M.P.H.
Assistant Vice President
Health and Safety Education

Charles B. Arnold, M.D., M.P.H.
Editor in Chief

Joan W. Parks
Managing Editor

Stanley Kranczer
Margaret Mushinski
Contributing Editors

Hazel Forbes
Associate Contributing Editor

Ada Arieta
Editorial Assistant

Doris Bressler
Director, Health Communications

Stanley Kranczer
Business Manager

Guru S. Bale, Ph.D.
Technical Specialist

Corporate Health Strategies
Data Contributor

Thomas D. Reilly
Art Direction

Lawrence Studio, Inc.
Graphic Design

The Statistical Bulletin (ISSN 0741-9767) copyright 1986, Metropolitan Life Insurance Company, One Madison Avenue, New York, N.Y. 10010. Published four times a year by Metropolitan Life Insurance Company. John J. Creedon, President and Chief Executive Officer; Robert Schwartz, Chairman; Harry Kamen, Senior Vice President and Secretary; Arthur G. Typermass, Senior Vice President and Treasurer. Printed in U.S.A. Subscriptions: U.S., its territories and Canada, $2/5 for one year (U.S. currency). Outside U.S. and Canada add $10 for postage. Send to: Statistical Bulletin, P.O. Box 64825, Baltimore, MD 21264.

Postage paid at New York, N.Y. Postmaster send address changes to Statistical Bulletin, 4201 E. Pratt St., Baltimore, MD 21202.

Letters will be published at the discretion of the editor, as space permits, and subject to editing and abridgment. They should be typewritten (double-spaced). Send to: Statistical Bulletin, 16-U, Metropolitan Life Insurance Company, One Madison Avenue, New York, N.Y. 10010.

From The Editor's Desk

The Bard rightly knew a clever theatrical ploy. He had MacDuff "untimely from his mother's womb ripped," and thus neatly sidestepped the witches' prophecy. Macbeth's fate was sealed with this neat turn by Shakespeare in "Macbeth." Today cesarean sections, as we now refer to them, are also causing consternation, but without such drastic implications. *SB* this issue reviews the recent regional trends in incidence and medical care statistics in the rising proportion of total deliveries by cesarean. As the article and the Commentary by Dr. Paul Placek discuss, the subject has many facets, each with public health significance.

Marriages Still Much in Vogue

In case you were doubtful, marriages are still very much in vogue in all parts of the United States. This issue provides some insights into the recent demographic trends in marriage and once more proves that the venerable institution has its unpredictable side statistically, just like its folklore reputation.

Accident Prevention: Key in Working Environment

On a more serious note, accidental deaths among men of working ages continue to be one of the United States' most important problems in prevention. These data help us better understand why accident prevention is such a key part of every American working environment. Behind these numbers are tragic stories of men with dependents whose loss cannot be adequately measured in our humble tables and figures. The implications are sobering.

Problems of Doctors

Capsule Briefs this issue highlights the increased problems of doctors in today's changing and stressful medical care market place. Because of physicians' role in medical care, their problems will become everyone's in time. What are your reactions to these news notes?

Life Expectancy at a Plateau

Length of life expectations for newborns in the United States has reached a plateau at 74.7 years. Though boy babies born last year can expect a 0.1 year increase, baby girls born in 1985 are expected to live slightly less time (0.2 years) than those in 1984. At the same time, minority life expectancy is increasing, which is good news. How many more years may this plateau continue? *SB* does not know, have you a forecast?

A New SB Department

And now, introducing a new member of our *SB* departments, "Statistical Information, Please." For those longtime readers with matching memories, this department will be remembered for its brief appearance during the early 1940s. It has returned to assist readers with perplexing statistical questions. We hope you will write. We'll publish those we think have greatest reader interest.

On that note of personal inquiry, I wish you good reading. □

Charles B Arnold

The Statistical Bulletin will publish comment and criticism from readers about its contents. Alternate interpretations of data analyses or different points of view about subjects are particularly welcome. Use address at end of publisher's statement, opposite page.

Costs for Cesarean Section: Regional Variations

The cesarean section rates in the United States more than quadrupled from 1965 to 1984. They rose from 4.5 percent of all births in 1965 to 21.1 percent of deliveries in 1984. In 1983 cesarean sections (C-sections) ranked No. 2 among the 10 most common surgical procedures performed on patients under 65, with a record 808,000 operations reported.[1,2]

In 1983 cesarean sections ranked No. 2 among the 10 most common surgical procedures performed on patients under 65.

Increasing Rates a Growing Public Health Concern

The frequency of cesarean childbirth and the dramatic increase in rates have been receiving increased professional and public attention for more than a decade and a half. The growing concern centers on at least four factors: (1) rates in the United States are high and continue to rise faster than those in other developed countries; (2) an increased risk of injury and/or death exists among mothers during a C-section in comparison to a vaginal delivery; (3) some observers believe there is an increased risk of morbidity among infants delivered by cesarean; and (4) medical care charges associated with this form of delivery are approximately twice those of a vaginal birth because of higher ancillary expenses and physicians' fees, as well as longer hospitalization for both mother and infant, and a longer period of rehabilitation for the mother.[3-6] These and other issues prompted the National Institute of Child Health and Human Development in 1980 to hold a consensus development conference on C-sections.

By late 1981 the conference recommendations and a summary of its findings were distributed to the medical community in general, and the obstetrical community in particular. The consensus conference statement acknowledged that the rising cesarean rates were of concern and were in need of immediate attention. The members judged that the trend "may be stopped and perhaps reversed, while continuing to make improvements in maternal and fetal outcomes..." Recommendations for actions and goals for further investigation were outlined in the conference statement.[6] Yet, cesarean birth rates have continued to increase. It is clear that much more needs to be done to decrease the unacceptably high rate of cesareans in the United States and to try to counter the long held practice of "once a C-section, always a C-section."

Rates of cesarean sections in the United States have more than quadrupled since 1965.

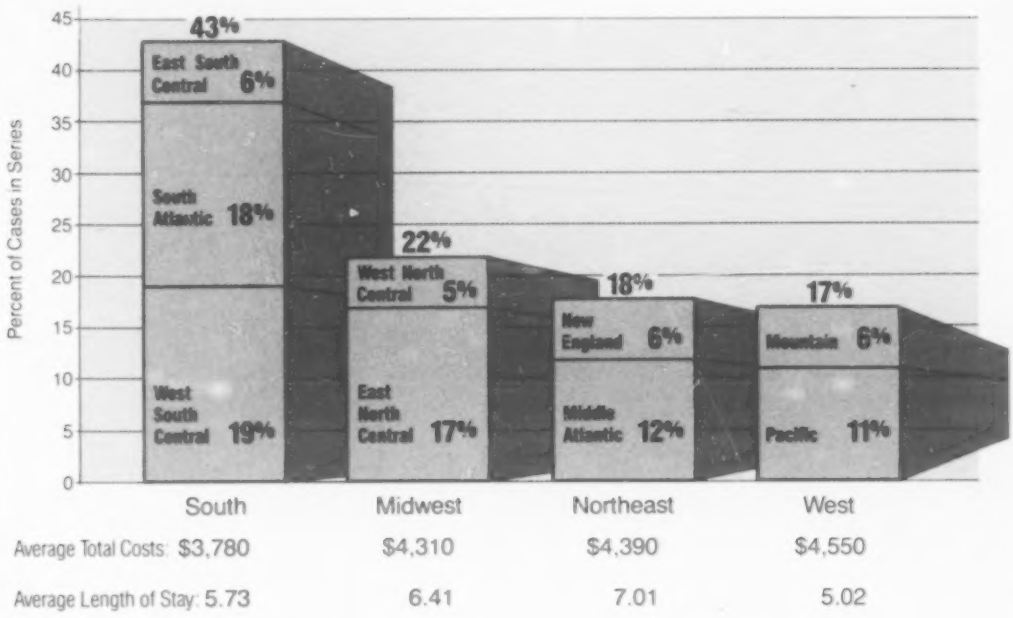
Reasons for the increasing rates continue to be the subject of much controversy and study. Certain tendencies clearly contribute to these rate increases: fear of litigation, changes in the management of certain high-risk or difficult births (e.g., breech presentations or forceps delivery), increased use of monitoring equipment during labor, disproportionate number of repeat cesareans, and the high number of C-sections among young women, which will tend to result in future surgical deliveries.[7,8]

David Johnson

Regional Differences in Cesarean Section Rates

Regional differences in the rates of C-sections have persisted for more than a decade. As shown in the Commentary (p. 9), the highest proportions of cesarean deliveries have been reported in the Northeast and South regions of the United States and the lowest in the West and Midwest. Metropolitan areas report rates higher than nonmetropolitan areas even after controlling for mother's age and the birth weight of the baby. Despite considerable investigation of these patterns, there is little agreement among experts about their cause. The issues continue to be debated, but many researchers conclude that the variations in C-section rates are not due to geographic differences in the distribution of high-risk populations.[7,9]

Figure A—Distribution of Cesarean Section Cases by Geographic Area and Division, With Average Charges and Length of Stay for Major Divisions January 1, 1982–June 30, 1983



Source of basic data: Claims data from Metropolitan Life Insurance Company merged and edited by Corporate Health Strategies, Inc.; analysis and calculations by Health and Safety Education Division personnel.

Metropolitan Life Study

Not only do regional differences exist in the proportion of C-sections, but differences also exist in the cost of this surgery. Epidemiologists and statisticians at Metropolitan Life studied the charges associated with cesarean childbirth for the period January 1, 1982 through June 30, 1983. Based on group health insurance total claims paid by the Metropolitan Life Insurance Company, Corporate Health Strategies, Inc. linked hospital and physician claims for cesareans performed during this period. A total of 8,636 typical* C-sections were performed on employees and dependents insured under Metropolitan Life group health con-

* "Typical" surgeries exclude length-of-stay outliers and fall within 97.2 percent of the usual length of stay criteria outlined in the diagnosis related group (DRG) criteria.

tracts. Average medical/surgical and hospital charges are presented in this analysis by state and geographic area for women between the ages of 15 and 44 (modal age was 26). Presentation of data is restricted to those 34 states in which 50 or more C-sections were performed; these data represent 95 percent of the reported cases.

The distribution of cesarean cases is presented in Figure A for all nine geographic areas of the United States and collapsed into the four major divisions referred to in the medical literature. Of interest is the fact that the lowest total charge ($3,780) among the four major divisions was recorded in the South—the division that contributed the largest proportion of cases in this series and which reported the second shortest length of hospital stay. The obverse of this was also true. That is, the highest charge ($4,550) was recorded in the West—the division that contributed the smallest proportion of cases and in which the shortest length of stay was recorded.

Cost Variation by Region

The average total charge in 1982–83 for a cesarean birth in the United States was $4,130 with marked variation between the nine regions (Figure B). The Pacific region reported average total charges close to $5,000—charges that were 21 percent above the national average. The second highest charge was reported in the Middle Atlantic region with a cost of $4,690, 14 percent above that for the entire United States. The only other region to report costs in excess of the national average was the East North Central, where the cost was 7 percent higher. Two-thirds of the regions reported costs below the national average, indicating the skewness of the distribution caused by the average charges in the highest regions. The lowest average charge was in the East South Central region, averaging 14 percent below that of the nation.

State Variation in Costs

Total charges for a cesarean birth differed by as much as 182 percent between individual states (Table, page 7). The District of Columbia* led in total charges, 30 percent above the national average; this high cost was followed closely by the charges reported in California, Illinois and New

Total charges for a cesarean birth differed by as much as 182 percent between the individual states.

York, $5,300, $5,300 and $5,290, respectively, each 28 percent above the average. The total charge for Florida was the only other case where the cost exceeded the national average by 10 percent or more.

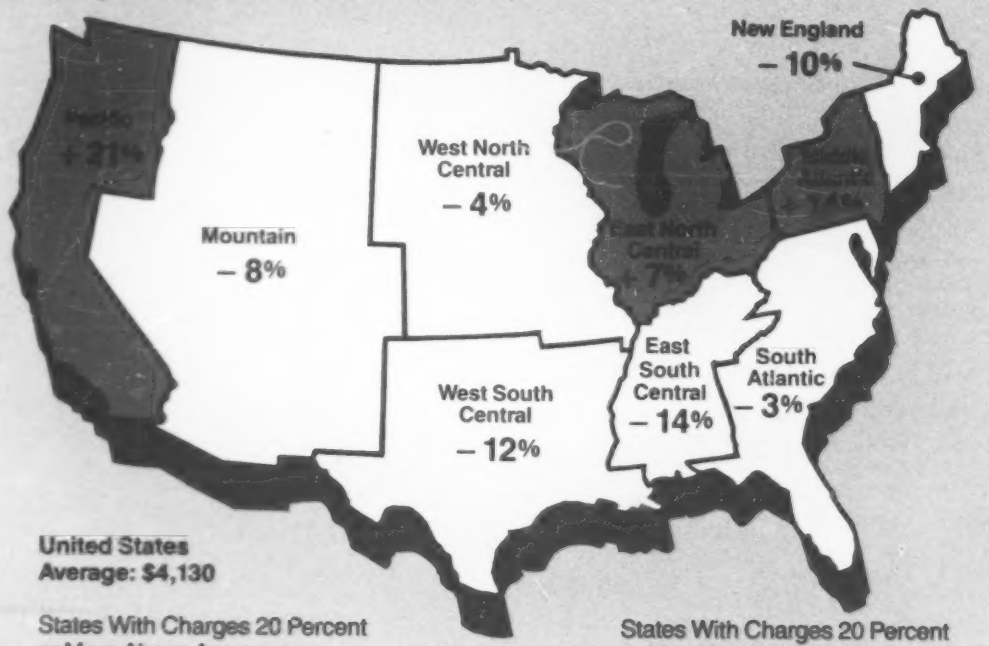
The lowest total C-section charge was in Utah, $2,940, or 29 percent below the national average and 45 percent lower than the high cost in the District of Columbia. Similarly low charges were recorded in Kentucky, Mississippi, Iowa, Washington, South Carolina, and Minnesota, where charges were between 25 and 20 percent below the average. Seven states, Arkansas, North Carolina, Louisiana, Connecticut, Georgia, Tennessee and Texas, averaged charges ranging from 18 to 12 percent below the norm.

Physician and Hospital Charges

As seen in the accompanying table, on average, 69 percent of the total insurance charges for a cesarean birth was attributable to hospital charges (i.e., room and board and ancillary fees). By state, these

*The average charges for the District of Columbia are based on a total of 72 cases.

Figure B—Cesarean Section Charges by Geographic Area
January 1, 1982–June 30, 1983



United States Average: $4,130

States With Charges 20 Percent or More Above Average:

District of Columbia	+30%
California	+28%
Illinois	+28%
New York	+28%

States With Charges 20 Percent or More Below Average:

Utah	–29%
Kentucky	–24%
Mississippi	–24%
Iowa	–23%
Washington	–21%
South Carolina	–21%
Minnesota	–20%

Source: See Table.

proportions ranged from 77 percent in Michigan and Missouri to 64 percent in Maryland and California.

Ancillary charges (including operating room charges, laboratory and blood bank fees, etc.) averaged three-fifths of the hospital bill. These charges typically were one and one-half times the room and board charges. In some states, however, ancillary charges ranged from two to almost three times greater than room and board. The highest ancillary charges were recorded in Illinois, Alabama, Missouri, California and Florida, all over $2,000 and more than 20 percent above the average.

Physician charges were found to vary extensively both between geographic areas and individual states. The average physician charge for a C-section was $1,270. Again, the Pacific area reported the

Regional Variations in Charges for Cesarean Section*
January 1, 1982–June 30, 1983

Geographic Area	Average Costs ($)					Average Length of Stay	Percentage	
	Total Hospital & Physician	Hospital Charge			Physician Charge		Hospital of Total	Ancillary of Hospital
		Total	Room & Board	Ancillary				
UNITED STATES	4130	2860	1150	1710	1270	5.99	69	60
New England	3720	2580	1190	1390	1140	6.12	69	54
Connecticut	3630	2360	1120	1240	1270	6.10	65	53
Massachusetts	3970	2840	1300	1540	1130	6.39	72	54
Middle Atlantic	4690	3230	1760	1470	1460	7.40	69	46
New Jersey	4120	2790	1270	1520	1330	6.69	68	54
New York	5290	3510	2310	1200	1780	8.68	66	34
Pennsylvania	4310	3110	1390	1720	1200	6.40	72	55
East North Central	4430	3290	1370	1920	1140	6.48	74	58
Illinois	5300	4010	1670	2340	1290	6.81	76	58
Indiana	3810	2710	1040	1670	1100	6.38	71	62
Michigan	4290	3310	1460	1850	980	6.14	77	56
Ohio	4110	3040	1270	1770	1070	6.34	74	58
Wisconsin	3910	2730	1140	1590	1180	6.49	70	58
West North Central	3950	2950	1090	1860	1000	6.20	75	63
Iowa	3200	2290	930	1360	910	5.55	72	59
Kansas	4050	2970	1090	1880	1080	5.90	73	63
Minnesota	3300	2290	910	1380	1010	5.88	69	60
Missouri	4310	3300	1190	2110	1010	6.58	77	64
South Atlantic	4010	2730	980	1750	1280	5.84	68	64
District of Columbia	5350	3710	1770	1940	1640	6.31	69	52
Florida	4650	3050	970	2080	1600	5.60	66	68
Georgia	3630	2490	750	1740	1140	5.67	69	70
Maryland	3920	2510	1150	1360	1410	5.96	64	54
North Carolina	3440	2470	900	1570	970	6.12	72	64
South Carolina	3280	2350	810	1540	930	6.01	72	66
Virginia	3820	2690	1130	1560	1130	5.98	70	58
East South Central	3550	2560	830	1730	990	5.92	72	68
Alabama	4140	3110	910	2200	1030	6.14	75	71
Kentucky	3120	2120	970	1150	1000	6.12	68	54
Mississippi	3150	2190	590	1600	960	5.58	70	73
Tennessee	3640	2680	820	1860	960	5.83	74	69
West South Central	3630	2420	840	1580	1210	5.56	67	65
Arkansas	3390	2380	700	1680	1010	5.29	70	71
Louisiana	3610	2470	740	1730	1140	5.22	68	70
Oklahoma	3820	2620	980	1640	1200	5.99	69	63
Texas	3630	2380	860	1520	1250	5.59	66	64
Mountain	3810	2610	940	1670	1200	5.06	69	64
Arizona	3720	2480	850	1630	1240	4.79	67	66
Colorado	4190	2920	1100	1820	1270	5.51	70	62
Utah	2940	1980	830	1150	960	4.94	67	58
Pacific	4990	3230	1250	1980	1760	5.00	65	61
California	5300	3410	1310	2100	1890	5.07	64	62
Washington	3270	2160	920	1240	1110	4.60	66	57

Note: Fewer than 50 cases; charges not shown.
*Surgeries performed on employees and dependents of group health customers of Metropolitan Life Insurance Company.
Source: Claims data from Metropolitan Life Insurance Company, merged and edited by Corporate Health Strategies, Inc.; analysis by Health and Safety Education Division personnel.

highest costs, $1,760, almost 40 percent above the United States average.

The highest physician charge was found in California, where the $1,890 fee was 49 percent higher than the U.S. total.

The highest physician charge was in California where the $1,890 fee was 49 percent higher than the U.S. total.

The fee in New York was the second highest, $1,780, 40 percent above the average. The District of Columbia and Florida followed with charges 29 and 26 percent above the norm. The lowest physician charge was that in Iowa of $910, a fee less than half the California fee and 28 percent below the national average.

Considerable between-state variation was evident in the length of the hospital stay reported for a typical C-section. Women in New York averaged the longest stay, 8.68 days (45 percent above the average of 5.99 days); this surgery required 4.60 days in the hospital for women in Washington. Only two other states, Arizona and Utah, reported hospital stays fewer than five days. California, in which total and component charges were high, ranging from 14 to 49 percent above the national average, reported a length of stay 15 percent *below* the norm, 5.07 days. For California, the observed C-section disparity in higher total charges and relatively low length of stay is part of a pattern in most DRGs.

Whatever accounts for rising cesarean rates and cost disparities, it seems time for heightened public awareness and greater national (and regional) discussion of the issues. For instance, a need exists for increased consumer and provider education about the medical feasibility of a vaginal birth after a cesarean in selected patients, which as a single cause, could lead to a dramatic reduction in cesarean birth rates. In addition, as the 1981 consensus conference report indicated, an increase in monitoring and public reporting of cesarean birth rates by hospitals should be encouraged in an effort to increase public awareness and to help erase C-section decisions of an uninformed nature. Greater emphasis by peer review committees should be given to indications for C-section by staff obstetricians. Because any surgery carries risks, elimination of all *unnecessary* cesareans is clearly in the nation's interest. Ultimately, safe, optimal and cost-effective medical care for the mother and her baby is everyone's goal for childbirth. □

References

1. Placek, P.J., Taffel, S.M. National Center for Health Statistics. National Hospital Discharge Data, 1986. Unpublished summary of data.
2. National Center for Health Statistics, Graves, E.J. *1983 Summary: National Hospital Discharge Survey. Advance Data From Vital and Health Statistics*, No. 100. DHHS Pub. No. (PHS) 84-1250. Public Health Service, Hyattsville, Md., Sept. 28, 1984.
3. "Digest: Avoiding unnecessary repeat cesarean deliveries may help stem overall rise in C-section rates." *Family Planning Perspectives*, 17(3): 125–127, 1985.
4. Petitti, D.B., Cefalo, R.C., Shapiro, S., Wholley, P. "In-hospital maternal mortality in the United States: Time trends in relation to method of delivery." *Obstet. Gynecol.*, 59: 6–12, 1982.
5. Gleicher, N. "Cesarean section rates in the United States." *JAMA*, 252(23): 3273–3276, 1984.
6. "NIH Consensus Development Task Force statement on cesarean childbirth." *J. Obstet. Gynecol.* 139(8): 902–909, 1981, and U.S. Department of Health and Human Services. *Cesarean Childbirth: Report of a Consensus Conference*. NIH Pub. No. 82-2067. Bethesda, Maryland: NIH, 1981.
7. Placek, P.J., Taffel, S.M. "Trends in cesarean section rates for the United States, 1970–78." *Pub. Health Reports*, 95(6): 540–548, 1980, and Placek, P.J., Taffel, S.M., Moien, M. "Cesarean section delivery rates: United States, 1981." *AJPH*, 73: 861–862, 1983.
8. Taffel, S.M., Placek, P.J. "One-fifth of 1983 U.S. births by cesarean section." *AJPH*, 75:190, 1985.
9. Williams, R.L., Chen, P.M. "Controlling the rise of cesarean section rates by the dissemination of information from vital records." *AJPH*, 73:863–867, 1983.

Commentary

Cesarean Rate Still Rising

The year 1984 marked the twentieth consecutive year in which cesarean rates have increased, and they now represent more than one-fifth of United States' deliveries. We at the National Center for Health Statistics began studying cesareans in 1965, using National Hospital Discharge Survey data. At that time cesareans represented 4.5 percent of the nation's annual deliveries.[1-5]

International comparisons with 16 developed countries reveal that the United States leads all of these countries in the rate of deliveries performed by cesarean.[6] In 1981, 17.9 out of every 100 births in the United States were by cesarean, while this rate was under ten in Austria, Czechoslovakia, Hungary, Netherlands, New Zealand, Norway, Portugal, and England and Wales, and under fifteen in Australia, Denmark, Bavaria, France, Sweden and Scotland. The Canadian rate has closely trailed the rising United States rate by about one point for the past decade.

Widespread Change in Obstetrical Practice?

Regional patterns in cesarean birth rates have persisted over the years (see table). These minor differences may be explained in part by the age and race of mothers, types and sizes of hospitals in the area, forms of insurance coverage and differing rates of diffusion of new obstetric technologies. More striking, however, is that cesarean deliveries have increased within all regions of this country, for all age groups, all marital statuses, all racial groups, and in all types and sizes of hospitals. The relative uniformity of the increase suggests there has been a widespread change in obstetrical practice over the last two decades.

Since 1970 the rate of cesareans among teenagers has increased five-fold compared with a three- to four-fold increase among older mothers. This is particularly significant because almost all of their subsequent deliveries will be by cesarean, thus giving impetus to the rising rate. In 1983 and 1984, only about five percent of women had a vaginal birth after previously delivering by cesarean, 95 percent had repeat cesareans. In 1982 and again in 1985, the American College of Obstetricians and Gynecologists (ACOG) issued guidelines in an attempt to reduce repeat cesareans. The President of ACOG has stated that many repeat cesareans could *safely* be avoided, and concludes that the "once a section, always a section" medical dictum is obsolete.[7,8]

Cesareans per 100 Deliveries by Region: United States

Year	United States	Region			
		Northeast	Midwest	South	West
1970	5.5	6.2	4.7	5.8	5.7
1975	10.4	11.9	9.3	10.5	9.9
1980	16.5	19.2	14.9	16.8	15.3
1983	20.3	21.5	18.8	21.3	19.1
1984	21.1	21.4	18.9	22.7	20.6

Major changes in the surgical management of breech presentations and a halving of forceps-assisted deliveries from 1972 to 1980 have also led to increases in the cesarean rate. In 1970 only one-sixth of breech presentations were delivered by cesarean, but in 1984 three-fourths of these were surgically delivered.[9, 11] Such changes have important ramifications for medical practice in the safe delivery of babies who present in difficult positions.

Implications for Health Care Costs

The continuing rise in the cesarean birth rate has important implications for health care costs and medical providers. The average length of stay for a cesarean delivery is 5.8 days, almost twice the 3.0 days reported for mothers who vaginally deliver. We have also found that the rate of cesarean births is higher among women with private health insurance and lower for women with government or no coverage. Finally, obstetricians frequently mention fear of malpractice lawsuits and the practice of defensive medicine as a factor in the rising cesarean rate.

This leads to the issue of whether the extra days of hospitalization, other expenses associated with surgical delivery, and increased risk of maternal mortality can be balanced against the savings associated with the birth of a healthy baby. Statisticians like me may not be qualified to judge whether a "standard" or "ideal" cesarean rate can (or even should) be established. Certainly, maternal and fetal outcome should not be compromised for efficiency's sake. Similarly, few would take issue with goals of increased childbirth education and heightened awareness by obstetricians concerning the option of vaginal birth after cesarean. □

Paul J. Placek, Ph.D.
Survey Statistician
Division of Vital Statistics
National Center for Health Statistics

References

[1] Placek, P.J., Taffel, S.M. "Trends in cesarean section rates for the United States, 1970-78." *Public Health Rep.* 95:540-548, 1980.

[2] Placek, P.J., Taffel, S.M. "United States cesarean section rate rises higher in 1979." *Public Health Rep.* 96:183, 1981.

[3] Placek, P.J., Taffel, S.M. "One-sixth of 1980 United States births by cesarean section." *Public Health Rep.* 97:380, 1982.

[4] Placek, P.J., Taffel, S.M., Moien, M. "Cesarean section delivery rates, United States, 1981." *AJPH* 73(8):861-862, 1983.

[5] Taffel, S.M., Placek, P.J., Moien, M. "One-fifth of 1983 United States births by cesarean section." *AJPH* 75(2):190, 1985.

[6] Notzon, F.C., Taffel, S.M., Placek, P.J. "Cross-national comparisons of cesarean section rates." Presented at the American Public Health Association meetings, Washington, D.C., Nov. 18-22, 1985.

[7] American College of Obstetricians and Gynecologists. "Guidelines for vaginal delivery after a cesarean childbirth." Statement of the Committee on Obstetrics: Maternal and Fetal Medicine. Washington, D.C.: ACOG, February 24, 1982, and American College of Obstetricians and Gynecologists. "New Guidelines to Reduce Repeat Cesareans." Statement by Dr. L. Klein for Vaginal Birth After Cesarean News Conference. ACOG News Release, January 25, 1985.

[8] Klein, L. "Cesarean birth and trial of labor." *The Female Patient* 9:106-117, 1984.

[9] Placek, P.J., Taffel, S.M. "Trend in complications associated with cesarean and non-cesarean deliveries, United States, 1970 and 1978." *Public Health Rep.* 98:396-400, 1983.

[10] Taffel, S.M., Placek, P.J. "Complications in cesarean and non-cesarean deliveries, United States, 1980." *AJPH* 73:856-860, 1983.

[11] Placek, P.J., Taffel, S.M., Keppel, K.G. "Maternal and infant characteristics associated with cesarean section delivery." *Health, United States, 1983*. Washington, D.C.: National Center for Health Statistics, U.S. Department of Health and Human Services, December 1983.

Recent Trends in Marriage

The marriage rate in the United States declined during 1985 to the lowest level since 1977. The 1985 rate was 10.2 per 1,000 population—3 percent below the rate of 10.5 for 1984, the lowest level in eight years. Last year's provisional count of 2,425,000 couples married represents a 2 percent decrease from the record total of 2,487,000 reported in 1984.

Marriages in the United States typically follow a seasonal pattern.

Marriages in the United States typically follow a seasonal pattern. Most occur in the summer, particularly in June, while relatively few couples exchange vows in January. In 1985, 280,000 marriage ceremonies were performed in June, resulting in a marriage rate of 14.3 per 1,000, while the rate in January was just 6.4 per 1,000, reflecting 129,000 marriages.

Although the marriage rate fluctuates significantly by month, only slight variations have occurred in the national trend since the late 1960s. Immediately after World War II, the marriage rate soared to a peak of 16.4 per 1,000 in 1946. The rate remained above 10 per 1,000 through 1951 and then declined to a postwar low of 8.4 per 1,000 in 1958.

The number of marriages per 1,000 population gradually rose again, exceeding 10 per 1,000 only after 1967. Beginning in 1968 and carrying through 1985, the marriage rate remained relatively stable, not rising above 10.9 per 1,000, nor falling below 9.9 per 1,000. Table 1 shows selected values in the trend of the number of marriages and marriage rates since 1940, while Figure A presents graphically the yearly data.

Variations by State and Region

Recent state and regional trends in marriage rates have shown considerable variation. Only 11 states reported more marriages in 1985 than in 1984. The largest increase occurred in Arizona, where the number of marriages rose by 12.9 percent from 31,506 to 35,567. The next largest relative increase was recorded in Connecticut—namely 8.5 percent—followed by Kentucky with 6.7 percent. In Vermont, marriages increased by 4.6 percent between 1984 and 1985, while in Florida, Texas and Hawaii, the percentage gain was around 3 percent. On the other hand, the number of couples marrying in Michigan, Missouri and Maine declined by 9 percent.

Only 11 states reported more marriages in 1985 than in 1984.

The number of marriages by state parallels total population size.

The number of marriages by state parallels total population size. California, for instance, reported more marriages in 1985 than any other state, 226,000. In New York, the second most populous state, almost 165,000 couples married during 1985. For both of these large states, last year's weddings represented a slight decline from 1984. In Texas, nearly 214,000 marriages were reported during 1985—just 12,000 fewer than in California. The only other states to experience more than 100,000 marriages

were Florida and Nevada. Table 2 presents the number of marriages by state during the period 1982-85.

Generally, the marriage rate is a better indicator than the count of marriages.

Occasionally, curiosities occur in marriage statistics. Generally, the marriage rate is a better indicator than the count of marriages. In computing states' rates, however, Nevada is the exception proving the rule. It has a relatively small population, but its proximity to California and statutes that make wedding arrangements easier have resulted in a marriage rate that is disproportionately higher than rates in other states.

In the United States, the marriage rate is calculated by the place where the wed-

Table 1—Marriages and Marriage Rates United States, 1940–1985

Year	Number of Marriages	Rate per 1,000 Population
1985 (Prov)	2,425,000	10.2
1984 (Prov)	2,487,000	10.5
1983	2,445,604	10.5
1982	2,456,278	10.6
1981	2,422,145	10.6
1980	2,390,252	10.6
1975	2,152,662	10.0
1970	2,158,802	10.6
1965	1,800,000	9.3
1960	1,523,000	8.5
1955	1,531,000	9.3
1950	1,667,231	11.1
1945	1,612,992	12.2
1940	1,595,879	12.1

Source: National Center for Health Statistics, Monthly Vital Statistics Reports.

Figure A—Marriages and Marriage Rates United States, 1940–1985

Source: National Center for Health Statistics, Monthly Vital Statistics Reports.

ding occurred. Excluding Nevada, the 1985 marriage rate was highest in South Carolina—15.8 per 1,000. Hawaii experienced a rate of 14.5 per 1,000 while Texas and Arkansas reported a rate of about 13.0 per 1,000. The lowest marriage rate during 1985 occurred in Pennsylvania—namely 7.5 per 1,000. A year earlier the rate in Pennsylvania was 7.8 per 1,000—also the lowest value. Other states that reported 1985 marriage rates of 8.0 per 1,000 or less were North Dakota, West Virginia and Nebraska. Figure B shows the states with the highest or lowest marriage rates.

Wedding Forecasts Look Bright

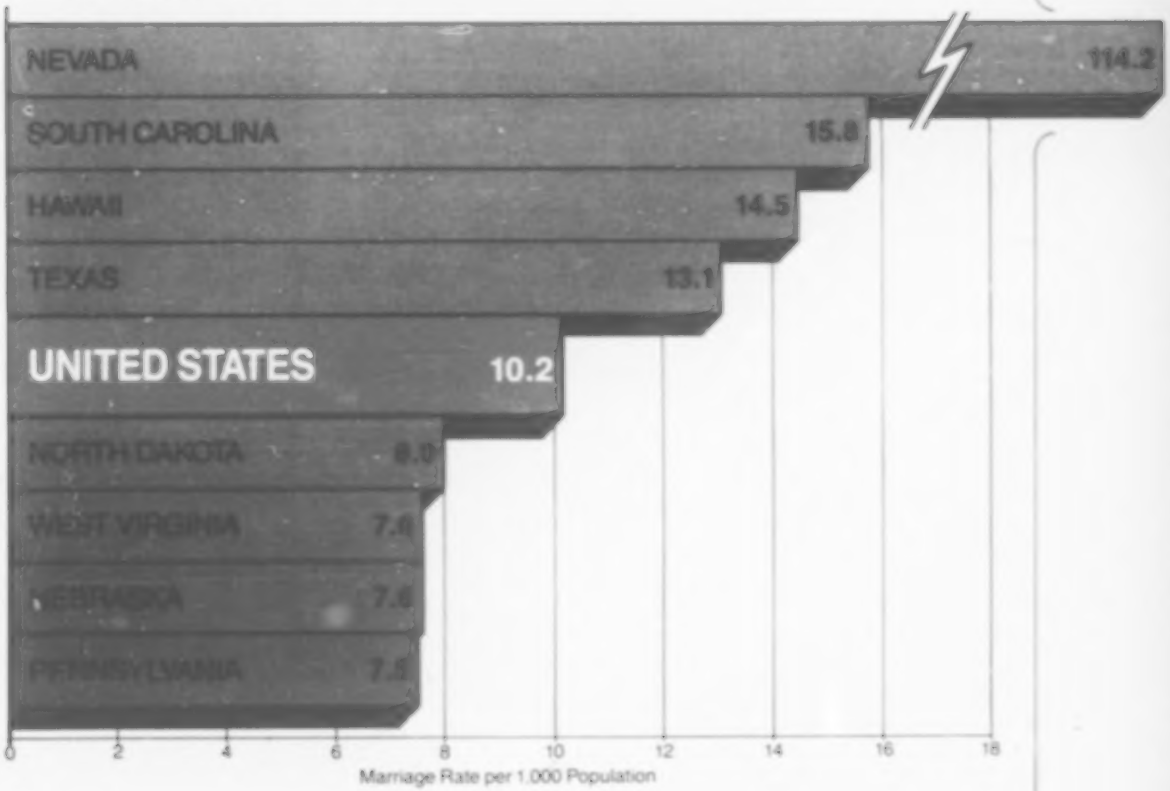
It's always interesting to estimate the future outlook for marriage statistics. A recent report by the Social Security Administration has a forecast that the total number of mar-

Table 2—Marriages in the United States, 1982–85

Geographic Area	1982	1983	Prov. 1984	Prov. 1985	Percent Change 1984–85	Rate per 1,000 Population 1985
New England	111,925	112,732	115,368	114,855	-.5	9.1
Maine	12,388	12,480	12,430	11,257	-9.4	9.7
New Hampshire	10,584	10,971	11,363	11,159	-1.8	11.2
Vermont	5,568	5,595	5,375	5,622	4.6	10.5
Massachusetts	48,654	48,789	53,198	51,648	-2.9	8.9
Rhode Island	7,885	8,053	7,942	7,963	.3	8.2
Connecticut	26,846	26,844	25,080	27,206	8.5	8.6
Middle Atlantic	310,019	316,291	323,648	314,466	-2.8	8.5
New York	156,720	162,398	168,860	164,864	-2.4	9.3
New Jersey	59,949	61,798	62,192	60,915	-2.1	8.1
Pennsylvania	93,350	92,095	92,596	88,687	-4.2	7.5
East North Central	390,631*	377,400*	384,412	365,661	-4.9	8.8
Ohio	102,905*	99,956*	98,708	94,176	-4.6	8.8
Indiana	55,924	53,982	52,705	52,688	0	9.6
Illinois	107,023	103,800	102,504	97,912	-4.5	8.5
Michigan	82,633	78,910	89,391	80,813	-9.6	8.9
Wisconsin	42,146	40,752	41,104	40,072	-2.5	8.4
West North Central	173,982	169,855	169,958	157,251	-7.5	9.0
Minnesota	37,409	36,259	36,873	34,458	-6.5	8.2
Iowa	27,188	26,769	26,960	24,720	-8.3	8.6
Missouri	53,836	53,258	54,148	49,014	-9.5	9.7
North Dakota	6,176	5,975	5,806	5,467	-5.8	8.0
South Dakota	8,353	8,013	8,035	7,836	-2.5	11.1
Nebraska	14,350	13,703	13,341	12,185	-8.7	7.6
Kansas	26,670	25,877	24,795	23,571	-4.9	9.6
South Atlantic	429,808	434,638	447,106	443,595	-.8	11.0
Delaware	4,827	5,569	5,463	5,345	-2.2	8.6
Maryland	47,867	47,619	46,815	47,069	.5	10.7
District of Columbia	5,571	5,436	5,488	5,040	-8.2	8.1
Virginia	62,099	61,858	65,976	66,670	1.1	11.7
West Virginia	16,467	15,930	15,456	14,649	-5.2	7.6
North Carolina	51,058	52,128	52,123	50,575	-3.0	8.1
South Carolina	53,496	53,691	55,882	52,776	-5.6	15.8
Georgia	72,603	73,442	75,817	73,541	-3.0	12.3
Florida	115,820	118,965	124,088	127,930	3.1	11.3
East South Central	167,120*	168,279*	172,856	172,440	-.2	11.4
Kentucky	34,236*	37,422*	44,006	46,949	6.7	12.6
Tennessee	57,867	56,467	55,205	54,942	-.5	11.5
Alabama	47,431	47,469	47,487	45,816	-3.5	11.4
Mississippi	27,564	26,921	26,158	24,733	-5.4	9.5
West South Central	319,929	316,323	318,965	319,464	.2	12.1
Arkansas	28,041	30,056	31,427	30,496	-3.0	12.9
Louisiana	45,581	43,177	41,295	39,666	-3.9	8.9
Oklahoma	47,660	44,043	38,612	35,536	-8.0	10.8
Texas	198,647	199,037	207,631	213,766	3.0	13.1
Mountain	240,493	239,066	232,226	233,165	.4	18.2
Montana	8,185	8,092	7,677	7,179	-6.5	8.7
Idaho	14,065	13,421	12,518	12,542	.2	12.5
Wyoming	6,799	6,201	5,723	5,355	-6.4	10.5
Colorado	37,739	36,114	34,630	33,938	-2.0	10.5
New Mexico†	17,614	17,872	15,171	14,585	-3.9	10.1
Arizona‡	31,406	30,809	31,506	35,567	12.9	11.2
Utah	18,427	18,437	17,579	17,077	-2.9	10.4
Nevada	106,256	106,120	107,422	106,922	-.5	114.2
Pacific	312,371	311,020	315,294	314,579	-.2	9.0
Washington	48,228	46,294	44,730	44,514	-.5	10.1
Oregon	24,186	23,346	22,594	22,414	-.8	8.3
California	220,064	220,760	226,560	226,150	-.2	8.6
Alaska	6,410	6,556	6,519	6,182	-5.2	11.9
Hawaii	13,483	14,062	14,891	15,319	2.9	14.5

*Incomplete data. †Licenses issued.
‡Includes licenses for some counties.
Note: Data are by state of occurrence and should be interpreted accordingly. Sum of states do not equal total for United States because not all data have been adjusted for revisions.
Source: National Center for Health Statistics, Monthly Vital Statistics Reports.

**Figure B—States With Highest and Lowest Marriage Rates
United States, 1985**



riages will rise slightly in the next few years.[1] However, in interpreting their estimate we need to recognize that such projections are very sensitive to changes in economic conditions, which could markedly alter the actual experience.

Marriage statistics, like the institution itself, have had an unpredictable, varied course over time. Despite the variability, trends are clearly discernible. Patterns in marriage statistics between and within years, as well as among states, tell us about marriage's enduring qualities. □

References

[1] Social Security Administration, Office of the Actuary. "Social Security Area Population Projections 1985. Actuarial Study No. 95." DHHS Pub. No. 11-11542. October 1985.

Capsule Briefs

are timely literature selections with broad reader interest.

Farewell, Private Practice.

Young physicians are not entering private practice today at the same rate their elders did. While "private practice hasn't disappeared, it is slipping away," according to a recent AMA survey. Nearly 40 percent of M.D.s under age 36 were employees in 1983, compared with 23 percent between the ages 36-45. Increasingly, newer graduates seek positions in HMOs, clinics, emergency rooms or large group practices. These jobs provide freedom for life away from medicine, e.g., family, recreational needs, community activities, not available to fee-for-service, self-employed M.D.s. (Wessel, D., *Wall Street Journal*, p. 1, January 13, 1986.)□

Incompetence Will Out?

Medicare, the federal medical insurance program for the elderly, has a problem with doctors whose "clinical competence is in doubt," according to a recent study by the Inspector General of the Health and Human Services Department. The report calls this a "major issue" because of the lives lost to medical incompetence and because the problem "unnecessarily adds billions of dollars to the nation's annual health expenditures." State medical licensure boards often do little to assist in the issue's resolution because of their backlog of cases. New York, for example, has 1,500 uninvestigated complaints. (Brinkley, J., *New York Times*, p. A21, February 4, 1986.)□

The Toll of Training.

The stress of practicing medicine begins earlier than most people realize, according to this report. From a survey covering the years 1979-84, over half of the directors of internal medicine residency programs reported that leaves of absence were granted to one or more medical residents under their direction in these years because of emotional impairment. Most impaired residents recovered, for 79 percent continued in medicine, although 10 percent dropped out, 2 percent committed suicide, and another 3 percent attempted suicide unsuccessfully (in 6 percent of the cases outcomes were unknown). (Smith, J.W., *et al. JAMA* 255:1155-1158, 1986.)□

A Federal Solution?

The professional Foundation for Health Care in Tampa, Fla., is examining the medical care practice patterns of 25-50 physicians, according to this report. The foundation is a nonprofit, peer review organization (PRO) that contracts with the federal government to monitor the health care of Medicare patients. The PRO reported to the federal government that it has 11 M.D.s under "primary review", another five have been sent letters. Review is occasioned when care provided is strongly suspected to be of inferior quality or represents excess utilization. (*American Medical News*, p. 16, March 7, 1986.)□

Is Imprisonment Part of the Answer?

The recent court martial and four-year prison sentence of Dr. Donal Billig, resulting from charges before a military court on negligent homicide, left "many in the medical profession wondering if the long-standing debate over how to discipline bad doctors had taken a new turn." As this thoughtful article proceeds, "the conviction comes at a moment of unparalleled concern about the quality of health care." Though experts are agreed that accountability by physicians remains essential for public confidence in medicine, if medical practice is rife with concerns about homicide charges, who will take care of high-risk patients? (Engelberg, S., *New York Times*, p. E5, March 9, 1986.)□

Does M.D.s' Compensation Affect Quality of Care?

This lengthy article does not provide a direct answer, alas, but does review the many unknowns that limit efforts to study this important question. Freedom to function in all spheres of medicine, including compensation, has long been a hallmark of American medicine. The author attempts unsuccessfully to analyze the experience of other Western countries as a means of understanding the quality-compensation issue. Surprisingly, perhaps for some, he finds that American M.D.s more freely provide compensation data to surveyors (e.g., AMA) than do their foreign counterparts. (Reinhardt, U.E., *Quality Review Bulletin* 11(12):366-377, 1985.)□

HMOs: New Irritant for Doctor Glut?

The excess numbers of physicians projected for 1990 by a federal study has a new complicating factor: the growth in enrollment of patients by health maintenance organizations (HMOs). Certain types of physicians appear in great excess now because HMOs use physician's specialty services so efficiently. As a result, there may be 50 percent more internal medicine specialists and 20 percent more pediatricians than needed by 1990. About 12 percent of adult care and 15 percent of child care would be given by physician's assistants by 1990, mainly in clinics and HMOs. The implications for medical school and residency training are painfully clear. (*Journal of Commerce*, January 29, 1986.)□

Which Rate Is Right?

There are threefold differences in regional rates per capita for medical care procedures like coronary bypass surgery. Is the upper rate too high, or are those who live where the lower rates prevail under-served? The answer to these and similar questions affects judgments about the quality of medical care and medical expenditures, as well as the health of all Americans. In this article and accompanying editorial, the authors review the possible explanations and means by which better answers may emerge. Dr. Wennberg concludes his editorial by urging that the medical profession "give priority to this task." (Chassin, M.R., *et al, New England Journal of Medicine* 314:285-90, and Wennberg, J., *ibid* 314: 310-311, 1986.)□

Accident Mortality Among Men of Working Ages

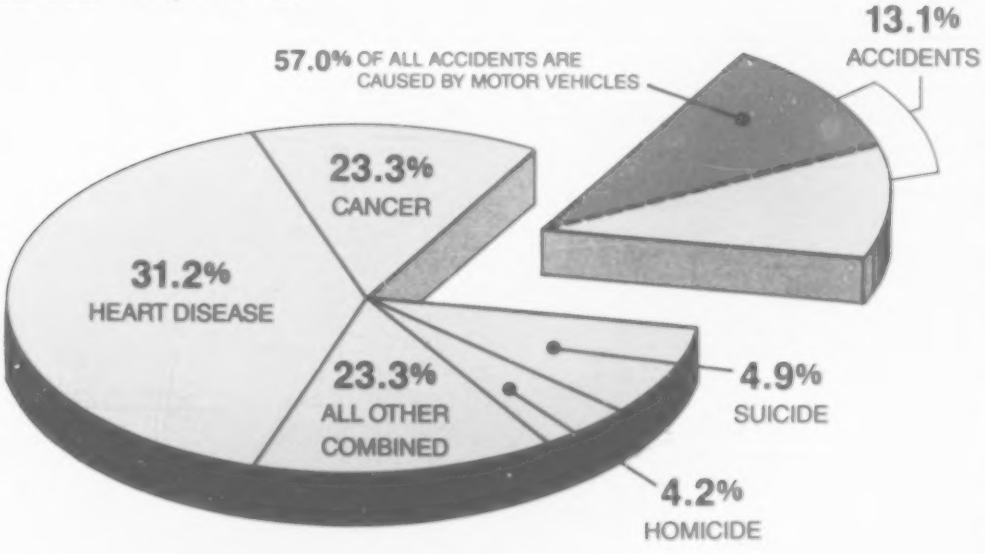
Accidents claimed the lives of 63,902 males in the United States in 1983. Of this total, almost three-quarters (46,223 deaths) occurred among men aged 15-64—men in the years of their greatest productivity and financial responsibility. More than half of all these deaths were the result of motor vehicle accidents; the remainder were divided between home, work and public accidents. Mortality from accidents ranks No. 1 for men in terms of potential years of life lost before age 65.

Mortality from accidents ranks No. 1 for men in terms of potential years of life lost before age 65.

Relative Importance of Accidents Among Leading Causes of Death

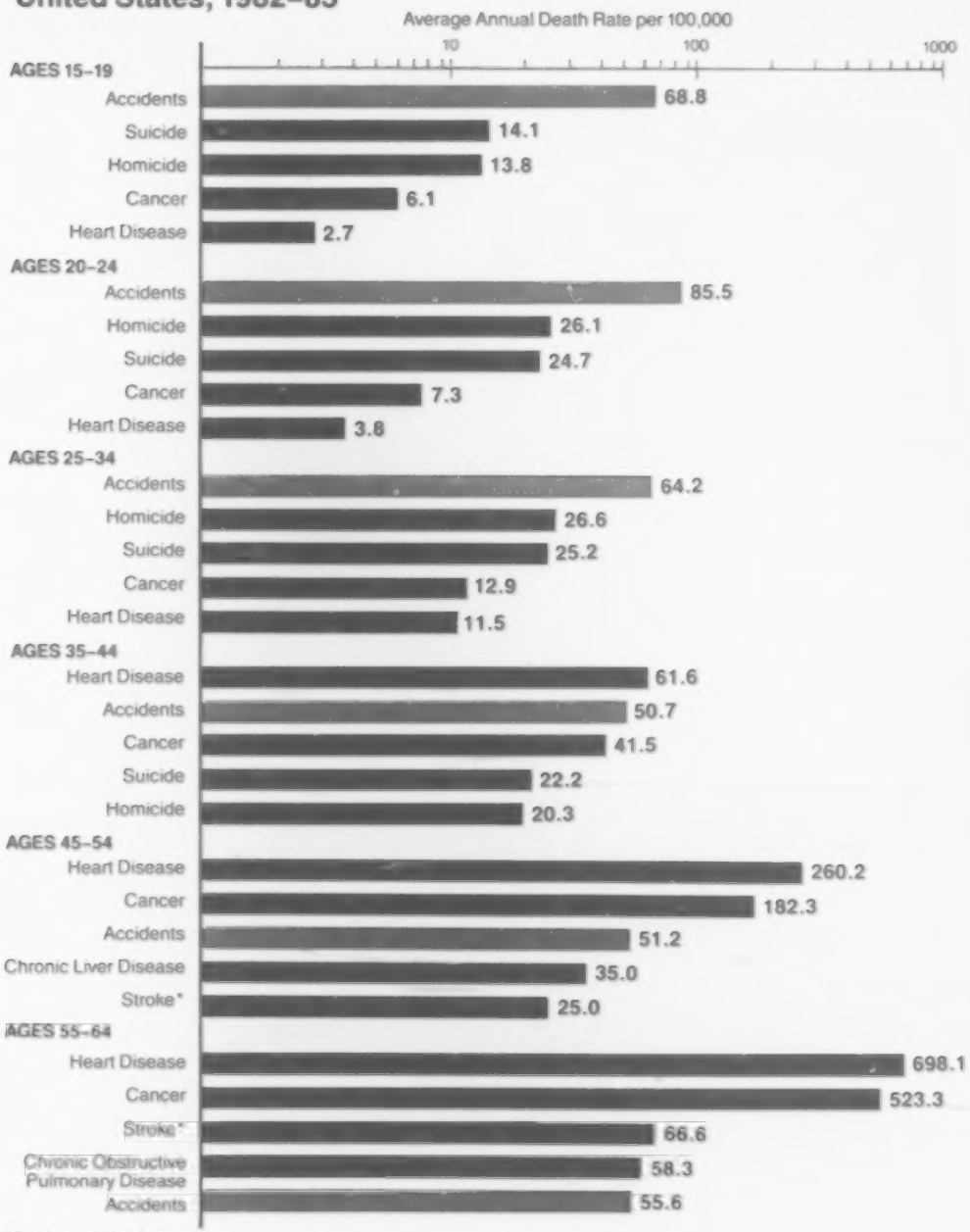
One death of every eight among men between 15 and 64 years of age in 1982-83 resulted from an accident. As seen in Figure A, only heart disease and cancer accounted for more deaths among men between these ages; suicide and homicide.

Figure A--Leading Causes of Death Among Men Aged 15–64 United States, 1982–83



Source of basic data: Reports of Division of Vital Statistics, National Center for Health Statistics.

Figure B—Leading Causes of Death Among Men Aged 15–64 United States, 1982–83



*Cerebrovascular disease.

Source of basic data: Reports of Division of Vital Statistics, National Center for Health Statistics.

Table 1—Mortality From Accidents Among Men Aged 15–64 By Age and Race, United States, 1972–73 and 1982–83

Death Rate per 100,000

Age Group	Total Accidents			Motor Vehicle Accidents			All Other Accidents		
	1972–73	1982–83	Percent Change	1972–73	1982–83	Percent Change	1972–73	1982–83	Percent Change
WHITE									
15–64*	81.9	60.8	–25.8	47.3	36.0	–23.9	34.6	24.8	–28.3
15–19	103.6	74.6	–28.0	71.5	54.8	–23.4	32.1	19.8	–38.3
20–24	114.8	89.3	–22.2	79.0	62.7	–20.6	35.8	26.6	–25.7
25–34	76.4	63.2	–17.3	45.8	37.8	–17.5	30.6	25.4	–17.0
35–44	63.2	47.7	–24.5	33.1	25.3	–23.6	30.1	22.4	–25.6
45–54	68.7	47.3	–31.1	32.0	21.8	–31.9	36.7	25.5	–30.5
55–64	83.4	51.4	–38.4	34.2	20.4	–40.4	49.2	31.0	–37.0
ALL OTHER									
15–64*	124.9	70.1	–43.9	60.4	32.0	–47.0	64.5	38.1	–40.9
15–19	86.9	40.8	–53.0	41.2	22.1	–46.4	45.7	18.7	–59.1
20–24	132.4	65.5	–50.5	74.9	39.7	–47.0	57.5	25.8	–55.1
25–34	123.6	69.9	–43.4	66.2	35.0	–47.1	57.4	34.9	–39.2
35–44	127.1	71.5	–43.7	59.0	31.2	–47.1	68.1	40.3	–40.8
45–54	132.7	80.4	–39.4	58.5	31.5	–46.2	74.2	48.9	–34.1
55–64	148.3	92.2	–37.8	60.0	30.8	–48.7	88.3	61.4	–30.5

*Adjusted on basis of age distribution of the United States total population, 1940.
Source of basic data: Reports of the Division of Vital Statistics, National Center for Health Statistics.

respectively, ranked fourth and fifth among the major causes of death for men in this age group.

Figure B presents the five leading causes of death for men in six age groups between 15-64. Accidents overshadowed all other causes of death among young men 15-34. Between 15-19, accidents claimed more lives than all other causes of death combined and close to five times the number of lives lost from suicide, the second leading cause of death for men in this age group. Accidents also led all other causes of death for men 20-24, and such mortality was more than three times that from homicide in this age group. Not until ages 35-44 does the rel-

ative importance of accidents drop below another cause of death, i.e., heart disease. Accidents rank third at ages 45-54 and fifth at ages 55-64, just below chronic obstructive pulmonary disease. This shift is more a reflection of the sharp rise with age in mortality from cancer and cardiovascular diseases, rather than a decline in mortality from accidents.

White/Nonwhite Trends in Accident Mortality

Some recent trends in accident mortality have been quite favorable. Between 1972-73 and 1982-83, there was a 26 percent decrease in accident mortality rates among white males 15-64 and a 44 percent decrease among men of all other races (Table 1). Among white men, the overall death rate from accidents decreased from 81.9 per 100,000 in 1972-73 to 60.8 in 1982-83. Decreases were recorded in each age group with the largest decrease (38 percent) evident for white males 55-64 and the smallest (17 percent) for white men 25-34. For men of all other races, the mortality rates from accidents dropped from 124.9 per 100,000 in 1972-73 to 70.1 in 1982-83. Reductions were large in every age group, and

---

Accidents overshadowed all other causes of death among young men 15–34.

---

were larger than those among their white counterparts for all ages except 55-64.

White men have a lower risk of accidental death than nonwhites. In 1982-83 mortality from accidents among nonwhite men was lower than that for whites only at ages 15-19 and 20-24. By ages 45-54 and 55-64, the ratio of nonwhite to white mortality reached 1.7 to 1. Accident death rates among white men were highest at ages 20-24 (89.3 per 100,000) and decreased in each successive age group thereafter until 55-64. Among nonwhite men, however, death rates followed an upward trend, rising from 40.8 per 100,000 at ages 15-19 to 92.2 at ages 55-64.

In 1982-83 motor vehicle accidents accounted for 59 percent of the accident mortality rates among white males 15-64 and 46 percent of accident death rates among nonwhite males. The proportion decreases fairly steadily with age—from about three-fourths at ages 15-19 to two-fifths at ages 55-64 among white men and from three-fifths at ages 20-24 to one-third at ages 55-64 among nonwhite men.

Motor vehicle accidents remained the major cause of accidental fatalities throughout the working ages.

The trend in motor vehicle accidental death rates has improved, too. From 1972-73 to 1982-83, mortality from motor vehicle accidents decreased 24 percent among white men and 47 percent among nonwhite men aged 15-64. Reductions in mortality among white men varied greatly by age, with the largest improvement (a 40 percent decrease) evident at ages 55-64. Larger reductions in such mortality rates were evident among nonwhite than white men at each age. Among nonwhites, the rates decreased by approximately 47 percent in each age group. Mortality from all

Table 2—Mortality From Leading Types of Accidents Among Men Aged 15–64 United States, 1982–83

Type of Accident	Average Annual Death Rate per 100,000						
	15–64*	15–19	20–24	25–34	35–44	45–54	55–64
Accidents—All Types	61.6	68.8	85.5	64.2	50.7	51.2	55.6
Motor Vehicle	35.1	49.1	59.1	37.4	26.1	23.0	21.5
Drowning†	3.9	6.5	6.2	4.1	2.7	2.5	2.1
Falls	3.2	1.4	2.2	2.3	2.7	4.7	7.3
Poisoning by solids & liquids	2.6	.8	2.5	4.6	2.8	1.8	1.7
Drugs and medicaments	2.1	.5	2.2	4.2	2.2	1.1	1.0
Fires and flames	2.2	1.0	1.7	2.1	2.0	2.6	3.8
Firearm	1.6	2.5	2.2	1.6	1.3	1.0	.9
Accidental deaths as a percent of all deaths	13%	57%	51%	36%	19%	7%	3%
Motor vehicle accident deaths as a percent of all accident deaths	57	71	69	58	51	45	39

*Adjusted on basis of age distribution of the United States total population, 1940.
†Exclusive of deaths in water transportation.
Source of basic data: Reports of the Division of Vital Statistics, National Center for Health Statistics.

other forms of accidents decreased 28 percent among white men 15-64 and 41 percent among nonwhites in this age range. For whites, the decreases ranged from a low of 17 percent at ages 25-34 to highs of 38 percent at ages 15-19 and 37 percent at 55-64. For nonwhites, the largest reduction (59 percent) was recorded at ages 15-19 and the smallest (31 percent) at ages 55-64.

In 1982-83 motor vehicle accident death rates were lower among nonwhite men than white men at the three youngest age groups. Death rates from all other types of accidents combined were similar through age 24 but higher for nonwhite men thereafter. For both white and nonwhite men, motor vehicle death rates peaked among 20-24 year olds (62.7 per 100,000 whites and 39.7 for nonwhites) and steadily decreased with age.

Mortality by Type of Accident

Motor vehicle accidents remained the major cause of accidental fatalities throughout the working ages; they accounted for almost three-fifths of the total 1982-83 accident mortality among men at ages 15-64 (Table 2). For men aged 15-24, such accidents accounted for nearly 7 out of 10 accident fatalities. The death rate for motor vehicle accidents among men 15-19 was 49.1 and rose to 59.1 at ages 20-24. Past age 24, the death rates from such accidents declined markedly.

Young workers are hurt more frequently than older employees, although not as severely.

Drowning, other than in water transportation accidents, ranked second as a cause of fatal injury among men 15-64, with the most hazardous period occurring under 25. Drowning took 6.5 lives per 100,000 at ages 15-19 and 6.2 lives per 100,000 at ages 20-24. After age 24, the fatality rate from this type of accident decreased, dropping to 2.1 per 100,000 at ages 55-64. Falls, the third leading cause of fatal accidents among working aged men, were a significant factor in accidental mortality for men 35 years old and older. The death rates increased with age, reaching 7.3 among men 55-64. Deaths from falls ranked second to motor vehicle accidents as a cause of accidental death at ages 45-54 and 55-64.

Mortality from accidental poisoning by solids and liquids peaked at ages 25-34. Eighty percent of poisoning deaths among men 15-64 were due to drugs and medicaments. Accident death rates from fires and flames generally rose with advance in age; they were the third leading cause of such deaths among men 45-54 and 55-64. Fatalities from firearm accidents ranked third among the causes of fatal injuries between 15 and 19; the proportion of accidental deaths in this manner decreased with age.

Disability Due to Injuries

Among men of working age, accidents are not only a major cause of death but also a leading cause of disability. Recent data show that young workers are hurt more frequently than older employees, but the more severe cases (fatalities and permanent disabilities) account for a larger proportion of the cases among older workers than among younger ones.[1] An index of injury incidents by occupational groups shows that laborers sustain job-related injuries almost four times the average for all workers and that operatives and craftworkers experience injuries approximately one and one half times this average. In contrast, professional and technical workers, managers and administrators, salesworkers and clerical workers incur injuries about one-fourth the norm.[2] Between 1979 and 1983 the United States Department of Labor Statistics showed an annual decline in work-related injuries, sicknesses and death. However, in 1984 this encouraging trend was reversed and the rates of injuries are expected to continue to increase as more people join the work force.[3]

Economic Impact of Injuries

The economic impact of injuries is frequently overlooked in the ordering of public expenditure priorities. The costs associated with cancer and heart disease are quoted

quite frequently but accidents also cost the nation billions of dollars. The National Safety Council recently estimated that all accidents cost the United States $96.9 billion in 1984 in terms of medical expenses, lost wages, property damage, insurance administration and indirect costs.* Motor

Accidents cost the nation an estimated $96.9 billion in 1984.

vehicle accidents accounted for an estimated $47.6 billion, worksite accidents $33.0 billion, home accidents $10.8 billion and public accidents $7.2 billion.[4]

Beyond terms of human suffering and death, injuries—which are largely preventable—place an obvious enormous burden on the nation's economic and health care resources. The accidental injuries, disabilities and deaths among working aged men affect the work force, employers, the medical community, insurance companies and the family. We need to think of safety not only as a cost of doing business or keeping well, but as a profitable investment in a prospering, healthy America. □

*Total costs exclude duplications between work and motor vehicle and home and motor vehicle costs.

References

1. Root, N. "Injuries at work are fewer among older employees" *Monthly Labor Review* 104(3) 30–34, Mar 1981
2. Root, N., Sebastian, D. "BLS develops measure of job risk by occupation." *Monthly Labor Review* 104(10) 26–30, Oct 1981
3. United States Department of Labor. *Occupational Injuries and Illness in the United States by Industry, 1984.* Washington, D.C. Bureau of Labor Statistics, 1986
4. Statistics Department. *Accident Facts, 1985 Edition.* Chicago, Illinois: National Safety Council, 1985

Record Longevity Maintained

Expectation of life at birth in the United States during 1985 was unchanged from the record level established in 1984. Although the average length of life at birth for the entire population has exhibited little, if any, improvement in the past few years, longevity for boys has experienced small but steady gains, resulting in new record highs. On the other hand, life expectancy for infant girls has fluctuated around the record high reported for 1984 and the previous peak in 1982. The preliminary 1985 life tables were prepared by the Metropolitan Life Insurance Company and the 1984 and earlier tables by the National Center for Health Statistics.

Life expectancy at birth for the total resident population has apparently reached a plateau.

Life expectancy at birth for the total resident population has apparently reached a plateau. The 1985 value of 74.7 years was exactly the same as in 1984 and just 0.1 years more than both the 1983 and 1982 figures of 74.6 years. However, the experience of newborn boys is very encouraging. Last year their longevity at birth rose to a new high of 71.2 years, a gain of 0.1 years from 1984 and the third successive year in which it increased by this amount. Among infant girls the preliminary 1985 expectation of life figure was 78.1 years. This represents a decline of 0.2 years from the provisional high of 78.3 years reported in 1984 and is even less than the 1982 figure of 78.2 years.

Influences at Both Ends of the Spectrum

The recent stagnation in life expectancy is a reflection of the shifting mortality experience of the U.S. population. Death rates from all cancers combined continue to rise. In addition, the recurring influenza outbreaks since 1982, with their detrimental effects on the growing number of elderly, have caused mortality from pneumonia and influenza, and chronic obstructive pulmonary diseases and allied conditions to increase. The impact of the flu epidemics has also suppressed the declining trend in mortality from the major cardiovascular diseases. On a more positive note, 1985 was the 23d consecutive year in which infant mortality rates declined. Last year the infant death rate fell to an estimated record low of 10.5 per 1,000 live births. In 1984 the provisional mortality rate during the first year of life was 10.6 per 1,000 and in 1983 the final rate was 11.2 per 1,000. In the past few years, the drop in the infant mortality rate was more rapid among boys.

Last year the infant death rate fell to an estimated record low of 10.5 per 1,000 live births.

Diminishing Differences Between the Sexes

The longevity gap between newborn boys and girls has diminished to its narrowest point since 1964. As a result of the recent divergent patterns in expectation of life at birth, the longevity advantage of infant girls declined to just 6.9 years in 1985. During

1984 the expectancy disparity in favor of girls was 7.2 years and as recently as 1981 was 7.5 years.

Past childhood the 1985 life expectancy figures for the total population were either unchanged or fractionally lower than those in 1984. Average remaining future lifetime for men at each of the selected ages shown in Table 1—with three exceptions—remained at their record level. For men at ages 15 and 35, expectation of life rose by 0.1 years, establishing a new record; on the other hand, for men aged 75 the highest expectancy figure occurred in 1982—namely, 9.1 years. Among women the provisional 1985 life table indicates that at these ages the number of additional years of life that could be anticipated uniformly declined from their prior peak.

Table 1—Expectation of Life (In Years) United States, 1979–81 to 1985

Age	National Center for Health Statistics 1979–81	1983	1984*	Metropolitan Life Insurance Company 1985†
Total Population				
0	73.9	74.6	74.7	**74.7**
15	60.2	60.8	60.8	**60.8**
25	50.8	51.3	51.4	**51.4**
35	41.4	41.9	42.0	**41.9**
45	32.3	32.7	32.7	**32.7**
55	23.9	24.1	24.2	**24.2**
65	16.5	16.7	16.8	**16.8**
75	10.5	10.7	10.7	**10.6**
Male				
0	70.1	71.0	71.1	**71.2**
15	56.5	57.3	57.3	**57.4**
25	47.4	48.0	48.1	**48.1**
35	38.2	38.8	38.8	**38.9**
45	29.2	29.7	29.8	**29.8**
55	21.1	21.4	21.5	**21.5**
65	14.2	14.5	14.5	**14.5**
75	8.9	9.0	9.0	**9.0**
Female				
0	77.6	78.1	78.3	**78.1**
15	63.8	64.2	64.3	**64.2**
25	54.2	54.5	54.6	**54.5**
35	44.5	44.9	44.9	**44.8**
45	35.2	35.4	35.5	**35.4**
55	26.4	26.6	26.7	**26.5**
65	18.4	18.6	18.7	**18.6**
75	11.6	11.8	11.9	**11.8**

*Provisional. †Estimated.

Table 2—Expectation of Life at Selected Ages, By Race and Sex United States, 1969–71 to 1984

Age	White			All Other					
				Total			Black		
	1969–71	1979–81	1984*	1969–71	1979–81	1984*	1969–71	1979–81	1984*
Male									
0	67.9	70.8	71.8	61.0	65.6	67.3	60.0	64.1	65.5
25	45.7	47.9	48.6	40.3	43.5	44.7	39.4	42.1	43.1
45	27.5	29.5	30.1	24.6	26.6	27.5	24.0	25.6	26.2
65	13.0	14.3	14.6	12.9	13.8	14.1	12.5	13.3	13.4
85	4.6	5.1	5.1	6.0	5.7	6.1	5.9	5.6	5.8
Female									
0	75.5	78.2	78.8	69.0	74.0	75.2	68.3	72.9	73.7
25	52.4	54.6	55.0	47.2	51.1	52.0	46.6	50.1	50.8
45	33.5	35.5	35.8	29.8	32.8	33.6	29.3	31.9	32.5
65	16.9	18.5	18.8	16.0	17.6	18.2	15.7	17.1	17.5
85	5.5	6.3	6.7	7.1	7.2	7.9	7.0	7.1	7.8

*Provisional.
Source: Various reports by the National Center for Health Statistics.

Longevity Trends by Race

In recent years longevity gains among nonwhites have outpaced those of whites. Between 1979–81 and 1984, the average remaining lifetime for newborn nonwhite boys rose from 65.6 years to 67.3 years or by 1.7 years. On the other hand, for white boys the increase was only 1.0 years—to 71.8 years. Moreover, during the decade 1969–71 to 1979–81, life expectancy for nonwhite infant boys rose by 4.6 years compared with just 2.9 years for whites. As a result of the favorable trend, the gap in expectation of life at birth between whites and nonwhites diminished to 4.5 years in 1984 from 5.2 years in 1979–81 and 6.9 years in 1969–71. For baby girls, the reduction in the longevity disparities by race was more pronounced. In 1984 newborn white girls could expect to

In recent years longevity gains among nonwhites have outpaced those of whites.

Table 3—Expectation of Life and Mortality Rates at Single Years of Age by Race and Sex, United States, 1983

Age	EXPECTATION OF LIFE IN YEARS					MORTALITY RATE PER 1,000				
	Total Persons	White		All Other		Total Persons	White		All Other	
		Male	Female	Male	Female		Male	Female	Male	Female
0	74 6	71 7	78 7	67 2	74 9	11 2	10 8	8 6	18 3	15 2
1	74 5	71 5	78 4	67 4	75 1	8	8	6	11	8
2	73 5	70 5	77 4	66 5	74 1	6	6	5	9	7
3	72 6	69 6	76 4	65 5	73 2	5	5	4	8	6
4	71 6	68 6	75 5	64 6	72 2	4	4	3	6	5
5	70 6	67 6	74 5	63 6	71 3	3	4	3	5	4
6	69 7	66 6	73 5	62 7	70 3	3	3	2	4	3
7	68 7	65 7	72 5	61 7	69 3	3	3	2	4	3
8	67 7	64 7	71 5	60 7	68 3	2	3	2	3	2
9	66 7	63 7	70 6	59 7	67 4	2	2	2	3	2
10	65 7	62 7	69 6	58 8	66 4	2	2	1	3	2
11	64 7	61 7	68 6	57 8	65 4	2	2	1	3	2
12	63 7	60 7	67 6	56 8	64 4	2	3	2	4	2
13	62 8	59 8	66 6	55 8	63 4	3	4	2	5	3
14	61 8	58 8	65 6	54 8	62 4	4	6	3	6	3
15	60 8	57 8	64 6	53 9	61 4	6	8	4	7	4
16	59 8	56 9	63 7	52 9	60 5	7	10	4	9	4
17	58 9	55 9	62 7	51 9	59 5	8	12	5	11	5
18	57 9	55 0	61 7	51 0	58 5	9	13	5	13	5
19	57 0	54 1	60 7	50 1	57 5	10	14	5	15	6
20	56 0	53 1	59 8	49 1	56 6	10	15	5	17	7
21	55 1	52 2	58 8	48 2	55 6	11	15	5	19	7
22	54 2	51 3	57 8	47 3	54 7	11	16	5	21	8
23	53 2	50 4	56 9	46 4	53 7	11	16	5	22	8
24	52 3	49 4	55 9	45 5	52 7	11	16	5	23	9
25	51 3	48 5	54 9	44 6	51 8	11	16	5	24	9
26	50 4	47 6	54 0	43 7	50 8	11	15	5	25	10
27	49 4	46 7	53 0	42 8	49 9	11	15	6	26	10
28	48 5	45 7	52 0	41 9	48 9	12	15	6	27	10
29	47 6	44 8	51 0	41 1	48 0	12	15	6	29	11
30	46 6	43 9	50 1	40 2	47 0	12	15	6	30	12
31	45 7	42 9	49 1	39 3	46 1	12	15	6	32	12
32	44 7	42 0	48 1	38 4	45 1	13	16	7	33	13
33	43 8	41 1	47 2	37 5	44 2	13	16	7	35	14
34	42 8	40 1	46 2	36 7	43 3	14	17	7	36	15
35	41 9	39 2	45 2	35 8	42 3	15	17	8	38	17
36	41 0	38 3	44 3	34 9	41 4	15	18	9	40	18
37	40 0	37 3	43 3	34 1	40 5	16	19	10	42	20
38	39 1	36 4	42 3	33 2	39 6	18	20	11	44	21
39	38 2	35 5	41 4	32 4	38 6	19	22	12	47	23
40	37 2	34 6	40 4	31 5	37 7	21	24	13	50	25
41	36 3	33 6	39 5	30 7	36 8	22	26	14	53	27
42	35 4	32 7	38 5	29 8	35 9	24	28	16	58	29
43	34 5	31 8	37 6	29 0	35 0	27	31	17	63	32
44	33 6	30 9	36 7	28 2	34 1	30	34	19	70	36
45	32 7	30 0	35 7	27 4	33 2	33	38	21	77	40
46	31 8	29 1	34 8	26 6	32 4	36	42	23	85	44
47	30 9	28 2	33 9	25 8	31 5	40	46	26	92	49
48	30 0	27 4	33 0	25 0	30 7	45	52	29	99	53
49	29 1	26 5	32 1	24 3	29 8	49	58	32	106	57
50	28 3	25 7	31 2	23 5	29 0	54	64	36	113	62
51	27 4	24 8	30 3	22 8	28 2	60	71	39	121	67
52	26 6	24 0	29 4	22 1	27 4	66	79	43	130	72
53	25 8	23 2	28 5	21 4	26 6	72	88	48	141	79
54	24 9	22 4	27 7	20 7	25 8	79	97	52	154	86
55	24 1	21 6	26 8	20 0	25 0	86	107	56	168	94
56	23 3	20 8	25 9	19 3	24 2	94	118	62	182	102
57	22 6	20 1	25 1	18 7	23 5	103	130	67	197	111
58	21 8	19 3	24 3	18 0	22 7	112	141	74	215	121
59	21 0	18 6	23 4	17 4	22 0	122	154	81	234	131
60	20 3	17 9	22 6	16 8	21 3	133	168	89	255	142
61	19 6	17 2	21 8	16 3	20 6	145	182	97	276	154
62	18 8	16 5	21 0	15 7	19 9	157	198	106	295	165
63	18 1	15 8	20 3	15 2	19 2	170	216	115	310	174
64	17 4	15 2	19 5	14 6	18 5	183	236	125	322	181
65	16 7	14 5	18 7	14 1	17 9	197	257	135	332	188
66	16 1	13 9	18 0	13 6	17 2	213	280	146	343	196
67	15 4	13 3	17 2	13 0	16 5	230	305	159	361	209
68	14 8	12 7	16 5	12 5	15 9	250	333	173	390	229
69	14 1	12 1	15 8	12 0	15 3	273	363	190	427	254
70	13 5	11 5	15 1	11 5	14 6	297	395	208	471	283
71	12 9	11 0	14 4	11 0	14 0	323	430	228	516	312
72	12 3	10 5	13 7	10 6	13 5	351	468	249	556	338
73	11 7	9 9	13 1	10 2	12 9	380	509	273	585	359
74	11 2	9 4	12 4	9 8	12 4	410	553	299	606	375
75	10 7	9 0	11 8	9 4	11 9	443	602	328	624	392
76	10 1	8 5	11 2	9 0	11 3	479	653	360	646	412
77	9 6	8 1	10 6	8 6	10 8	519	709	396	679	440
78	9 1	7 7	10 0	8 2	10 3	564	769	436	725	478
79	8 6	7 2	9 4	7 8	9 8	614	832	482	787	525
80	8 1	6 9	8 8	7 4	9 3	670	900	535	865	584
81	7 7	6 5	8 3	7 1	8 8	733	973	596	959	653
82	7 3	6 1	7 8	6 8	8 4	804	1050	666	1069	733
83	6 9	5 8	7 3	6 5	8 0	885	1130	750	1193	825
84	6 5	5 5	6 9	6 4	7 7	977	1213	850	1327	928
85	6 1	5 2	6 5	6 3	7 5					

Source: National Center for Health Statistics.

live to 78.8 years compared to 75.2 years for nonwhite girls or some 3.6 years longer. In 1979–81 the white longevity advantage at birth was 4.2 years and in 1969–71 it was 6.5 years.

The nonwhite population is, for the most part, comprised of blacks, and although their life expectancy increases were somewhat smaller than those of other nonwhites (for example, Japanese or Chinese) they were larger than for whites. Thus, in the period under review, the longevity differential between newborn whites and blacks gradually diminished. By 1984 the white advantage in expectation of life at birth had fallen to 6.3 years for boys and to only 5.1 years for girls. In 1969–71 the differences were 7.9 years and 7.2 years, respectively.

Racial Gap Narrowing Before Midlife

Virtually all of the progress in reducing the longevity disparity between races occurred before midlife. With advance in age, the nonwhite expectancy gains generally moderated but, in some instances, widened. Between 1979–81 and 1984, longevity

---

Virtually all of the progress in reducing the longevity disparity between races occurred before midlife.

---

of black and other nonwhite men and women aged 25 experienced larger increases than for whites. With the exception of black men, this was also the finding at age 45—in their case no narrowing was recorded.

No diminishment in the longevity gap occurred between white and nonwhite men aged 65. However, when compared with black men at this age, the expectation of life advantage of white men increased. Life expectancy for nonwhite women aged 65 continued to approach the level of white women.

An examination of the average remaining lifetime at age 85 in the period under review reveals a completely different picture. Most notable are the larger nonwhite longevity figures. Additionally, the trend data show that between 1969–71 and 1979–81 expectation of life for white men and women increased more rapidly than that for nonwhites. After 1979–81, there was an apparent reversal in the pattern of improvement. It should be noted that at the advanced ages, life expectancy values are subject to fluctuation because of potential variations in the underlying calculations.

Table 2 presents the recent trend in expectation of life figures by race and sex. Notwithstanding the generally larger longevity gains among the nonwhite population, their mortality rates continue to remain relatively higher than the corresponding rates among whites. This is evident from the right hand section of Table 3, which shows single years of age data on life expectancy and mortality. 1983 is the latest year for which such details are available. Death rates were less than one per 1,000 population at ages 1 to 36 among white women, and at ages 1 to 25 among nonwhite women. Mortality at this low level prevailed only at ages 1 to 15 among white men and at ages 2 to 16 among nonwhite men. Death rates remained below 5 per 1,000 until age 47 for white men and age 53 for white women; among nonwhites, death rates below 5 per 1,000 held until age 39 for men and age 47 for women.

Based on mortality conditions as they existed in 1983, about 4 out of every 10 white women could expect to celebrate their 85th birthday, while the likelihood was only about 2 in 10 for white men. Among nonwhites the chances of surviving to 85 were about 1 in 3 for women and 1 in 7 for men. □

STATISTICAL INFORMATION, PLEASE

Questions frequently come to ***SB*** that we would like to share with our readers. This new feature column will attempt to answer as many of your statistically oriented questions as space permits. We hope you will enjoy this new feature and will participate by sending us your queries.

* *

Q *Does bubonic plague, the famous black death of the Middle Ages, ever occur now in the United States?*

A Yes, although it is a relatively rare disease. Bubonic plague, a flea-transmitted disease of rodents transmissible to humans by vector fleas or by direct contact with an infected animal, does occur in the United States. In fact, the number of cases among humans has increased substantially during the past decade and averaged about 20 per year between 1975–84, but there have been as many as 40 cases reported in one year (1983). The fatality rate remains very high—18 percent of all cases, despite the the availability of effective antibiotics.

* *

Q *In which month do most births occur in the United States?*

A August. Data for the last decade show an average of 316,000 births occurring in August in this country. Second in rank order is July, with births fractionally lower than in August. September registered births just 2 percent below the number recorded for August.

* *

* *

Q *Of the 15 leading causes of death, which affect men much more than women?*

A The death rate from homicide and legal intervention, and suicide is 3½ times higher in men than women. The ratio is almost three to one for accidents and adverse effects, but is somewhat lower for chronic obstructive pulmonary diseases and allied conditions. Mortality from chronic liver disease is twice as common among men than among women. Among the causes of death for which the death rate for men is 1½ to two times that for women are nephritis, nephrotic syndrome and nephrosis, septicemia, malignant neoplasms, pneumonia and influenza and diseases of the heart.

* *

Q *Ages 25–64 are known as the years of greatest economic productivity. How many U.S. households are headed by persons in these years, and where do they live?*

A According to the latest U.S. Bureau of the Census data, there are about 63 million households throughout the United States headed by persons aged 25–64. By region, the majority of these households are concentrated in the South (33 percent). Next in rank order are Midwest (25 percent), Northeast (22 percent) and the West (20 percent).

* *

Please send your questions to:

Statistical Information Editor
Health and Safety Education Division, Dept. SB
Metropolitan Life Insurance Company
One Madison Avenue
New York, N.Y. 10010-3690

Health and Safety Education Materials Available from Metropolitan Life

Your Child's Health Care. Describes the health and medical care that every child needs. Suggests ways to help children learn about their health. Gives community resources. Six-panel leaflet.

Personal Health Record. Handy six-page folder for keeping an up-to-date record of your health and medical history. Every member of the family needs one of these.

Planning For Safety. Home safety checklist plus first-aid tips for common emergencies. Gives community self-help resources. Six-panel leaflet.

First Aid For the Family. Concise, easy-to-follow reference folder on standard first-aid procedures. Provides space for emergency phone numbers.

For further information, write to: Health and Safety Education Division, Dept. SB, Metropolitan Life Insurance Company, One Madison Avenue, New York, N.Y. 10010.

Coming in Future Issues

- Live Births by Age of Mother
- State Variations in Longevity
- Motor Vehicle Accidents: Variations by State and Sex
- Utilization and Costs of Psychiatric Care

Historical Perspectives

30 YEARS AGO

IN THE 1956 STATISTICAL BULLETIN

American husbands in 1955 were relatively young—almost 30 percent were under age 35 and a quarter were 35–44. Most—90 percent—maintained a household for their family and four-fifths of the families with husband aged 25–34 had at least one young child. Large households were common up to age 44, but then decreased in size as children left home. Even then, American couples with husband aged 45 or older had nearly 10 million of their children under age 18 living with them. (Currently the number is about 8 million—ed.) About 95 percent of all married men under age 65 were in the labor force. After age 65 the proportion was still above a half but then diminished rapidly. Although the husband was the primary breadwinner, an increasing proportion of wives worked to supplement the family income. (Presently, over 50 percent of married women are in the labor force—ed.) (Page 4, April) □

Cancer mortality ranked second to heart disease as a cause of death at ages 45–64. At that time, there were more than 90,000 cancer deaths at these ages in the United States, representing one-fourth of the total mortality. (Today, there are about 137,000 cancer deaths annually at these ages, accounting for one-third of the total deaths—ed.) A Metropolitan Life study for 1944–45 and 1954–55 showed a marked rise in cancer mortality among middle-aged men due primarily to increased lung cancer deaths. Among women, there was a sizable reduction in uterine cancer—the result of preventive measures, early detection and therapy. Breast cancer mortality, however, remained relatively stable despite a campaign for early detection. Early detection and treatment were seen as the major means of control, but eventual solution of the cancer problem would depend upon research into the causes. (Page 1, June) □

A study of hospitalization among Metropolitan male employees aged 17–64 for 1953 to 1955 revealed that about 10 percent were hospitalized annually. Hospitalization increased with age both in frequency and length of stay—frequency varied from 6 per 100 at ages 25–34 to 14 at ages 55–64; length of stay varied from 9 to 14 days at these ages, respectively. (In the general population (1982), lengths of stay varied from 6 to 8 days for men at ages 25–34 and 55–64, respectively—ed.) Abdominal operations, particularly herniotomies, appendectomies and cholecystectomies were the most common reasons for surgical hospitalization. Among nonsurgical causes—diseases of the circulatory and digestive systems were the most common. Psycho-neurotic disorders required the longest period of hospitalization. (Page 1, February) □

In 1955 American school children and youth were enjoying remarkably good health. A steady reduction in their mortality was evident between 1946 and 1955. A Metropolitan Life study on policyholders aged 5–19 revealed that accidents accounted for almost half of the deaths among boys and for one-fourth among girls. Cancer ranked next, ahead of all other diseases. (Recent data for the general population show that accidents and cancer combined are responsible for almost two-thirds and three-fifths of the mortality among boys and girls aged 5–19, respectively—ed.) Decline in morbidity and mortality from infectious and communicable diseases presented an encouraging picture. Hospital care was mainly for accidental injuries, tonsillectomies and appendectomies. Advances in medicine and nutrition had contributed to good health. Further efforts to foster good health, nutrition, and safety habits would eventually realize even greater improvements. (Page 3, August) □

A study of seasonal disability patterns among "blue collar" indoor and outdoor workers insured with Metropolitan was undertaken for 1954–55. Disability rates for both groups of workers peaked in the winter months with outdoor workers experiencing the higher rates. During winter, outdoor workers had rates of at least 1½ times those for indoor workers for such conditions as diseases of the circulatory and genito-urinary systems and accidents. During summer, the outdoor workers fared better than their indoor counterparts. This was particularly apparent for respiratory and circulatory diseases. Only one cause of disability—accidents—showed consistently higher rates among outdoor workers throughout the year. (Page 8, August) □

SB-3 (7-86) Printed in U.S.A.